

Claims

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1. An article intended to be submerged in molten zinc and low percentage aluminum/zinc melts, said article comprised of a steel alloy material having the following composition:

<u>%</u>	<u>Component</u>	<u>%</u>
1.0	< C <	5.0
10.0	< Cr <	30.0
0.0	≤ Ni <	30.0
1.0	< W <	15.0
1.0	< Mo <	10.0
0.0	< V <	10.0
0.0	< Nb <	10.0
0.0	< Co <	20.0
0.0	< B <	5.0
10.0	< Fe <	50.0
0.0	≤ Zr ≤	6.0
0.0	< Mn <	5.0
0.0	≤ Si <	1.0

2. An article formed of an alloy as defined in Claim 1, in which the alloy has a carbon element which is greater than 1.6% and less than 2.6% by weight.

1           3.     An article formed of an alloy as defined in Claim 1, in which the alloy  
2     has a chromium element which is greater than 15% and less than 30% by weight.

1           4.     An article formed of an alloy as defined in Claim 1, in which the alloy  
2     has a molybdenum element which is greater than 2% and less than 8% by weight.

1           5.     An article formed of an alloy as defined in Claim 1, in which the alloy  
2     has a vanadium element which is equal to or greater than 0% and less than 6%  
3     by weight.

1           6.     An article formed of an alloy as defined in Claim 1, in which the alloy  
2     has a niobium element which is equal to or greater than 0% and less than 6% by  
3     weight.

1           7.     An article submerged in a zinc/aluminum alloy melt containing more  
2     than 50% aluminum and formed of an alloy as defined in Claim 1, in which the  
3     alloy has a chromium element which is greater than 16% and less than 24% by  
4     weight.

1           8.     An article submerged in a zinc/aluminum alloy melt containing more  
2     than 50% aluminum and formed of an alloy as defined in Claim 1, in which the  
3     alloy has a nickel element which is equal to or greater than 0% and less than 2%  
4     by weight.

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1 9. An article submerged in a zinc/aluminum alloy melt containing more  
2 than 50% aluminum and formed of an alloy as defined in Claim 1, in which the  
3 alloy has a tungsten element which is greater than 15% and less than 25% by  
4 weight.

1 10. An article submerged in a zinc/aluminum alloy melt containing more  
2 than 50% aluminum and formed of an alloy as defined in Claim 1, in which the  
3 alloy has a molybdenum element which is greater than 4% and less than 8% by  
4 weight.

1 11. An article submerged in a zinc/aluminum alloy melt containing more  
2 than 50% aluminum and formed of an alloy as defined in Claim 1, in which the  
3 alloy has a vanadium element which is greater than 4% and less than 6% by  
4 weight.

1 12. An article submerged in a zinc/aluminum alloy melt containing more  
2 than 50% aluminum and formed of an alloy as defined in Claim 1, in which the  
3 alloy has a niobium element which is equal to or greater then 0% and less than 2%  
4 by weight.

1 13. An article submerged in a zinc/aluminum alloy melt containing more  
2 than 50% aluminum and formed of an alloy as defined in Claim 1, in which the  
3 alloy has a cobalt element which is equal to or greater than 0% and less than 15%

4 by weight.

1 14. An article submerged in a zinc/aluminum alloy melt containing more  
2 than 50% aluminum and formed of an alloy as defined in Claim 1, in which the  
3 alloy has a boron element which is equal to or greater than 0% and less than 2%  
4 by weight.

1 15. An article submerged in a zinc/aluminum alloy melt containing more  
2 than 50% aluminum and formed of an alloy as defined in Claim 1, in which the  
3 alloy has an iron element which is greater than 35% and less than 45% by weight.

1 7. 16. An article formed of an alloy as defined in Claim 1, in which the alloy  
2 has a zirconium element which is equal to or greater than 0% and less than 6%  
3 by weight.

1 8. 17. An article formed of an alloy as defined in Claim 1, in which the  
2 amount of the article lost due to molten metal dissolution is less than  $4 \times 10^{-5}$   
3 inches per hour.

1 18. An article formed of an alloy as defined in Claim 1, in which the  
2 selected element is in a carbide form of the element.

1 10. 19. An article formed of an alloy as defined in Claim 1, having a Rockwell

2 hardness greater than 40.

1 ~~11~~ 20. An article formed of an alloy as defined in Claim 1, in which the alloy  
2 is centrifugally castable.

1 ~~12~~ 21. An article formed of an alloy as defined in Claim 1, in which the alloy  
2 is machinable.

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